

ZAYTSEV, V. G., et al., Tr. NII uprav. mashin i sistem, 1971, vyp. 5,
pp 191-196

a card catalog of terminology usage. In conclusion, the general characteristics of the sector-wide descriptive dictionary are given and methods of using it are indicated. T. Sidorova.

UDC 629.12.013/.015:621.86/.87

USSR

IVANOV, P. V.

"Dynamic Loads Upon Cargo-Handling Equipment in Work at Sea"

Leningrad, Sudostroyeniye, No 11, Nov 70, pp 18-21

Abstract: The article deals with a possible trend in the theoretical calculation of cargo crane arms in coupled operation, with account taken of the dynamic loads under conditions of an agitated sea and tossing. 6 figures, 6 bibliographic entries.

1/1

USSR

UDC: 539.184

VYLOV, Ts.; DZHELEPOV, B. S.; IVANOV, R. B.; MIKHAYLOVA, M. A.; SERGEYEV, V. O.

"Relative Intensities of X-Rays of the K-Series of Elements With $Z = 79-88$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 26, No 10, Oct 72, pp 2136-2138

Abstract: The authors measure the relative intensities of x-ray lines of ^{79}Au , ^{80}Hg , ^{81}Tl , ^{82}Pb , ^{84}Po , ^{85}At , ^{86}Rn , ^{87}Fr , and ^{88}Ra . The measurements were made on a gamma-spectrometer with a plane-parallel Ge(Li)-detector. The diameter of the detector was 10 mm, and the thickness of the sensitive region was 6 mm. The input window was made from beryllium with 250-um thickness. The resolution in the investigated energy region (80 keV) was about 850 keV. The mean weighted values of the ratios $K\alpha_2/K\alpha_1$, $K\beta_1'/K\alpha_1$, and $K\beta_2'/K\alpha_1$ are tabulated. The authors thank L. G. Tsaritsyna and A. V. Mozzhukhin for preparing the sources.

1/1

USSR

UDC 669.245:589.23

IVANOV, R. D., URAZALIYEV, U. S., TIKHONOV, A. A., SALANSKIY, N. M., and
BUNAREV, V. I.

"Effect of Plasma on the Structure and Magnetic and Electric Properties of
Thin Permalloy Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 256-
262

Abstract: The effect of plasma and of physico-technological properties of the cathodic precipitation method on the structure and magnetic and electric properties of thin Permalloy films was experimentally investigated. The films were produced by atomization of the 79NM alloy. Their crystalline structure was investigated by methods of electron beam optics, and their chemical composition was tested by the x-ray fluorescence analysis method. The bombardment of the substrate surface by charged particles was found to produce a diversity in the microstructure of the film. The mechanism of forming precipitated cathodic films is in full agreement with thermodynamic principles for nonequilibrium statistical systems. Five figures, five bibliographic references.

1/1

- 82 -

USSR

UDC: 621.396.6-181.5

URAZALIYEV, U. S., IVANOV, R. D., GALKIN, B. D.

"Structure and Formation of Tantalum Thin Films Made by Electron Bombardment"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, pp 116-117 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V259)

Translation: The authors give the results of a study of structures and conditions of formation of thin tantalum films made by vaporization using an electron beam. When tantalum is precipitated on cold substrates, the substrate material has no observable effect on the phase composition of the films. The film consists of α -tantalum and tantalum carbide. The film has a "labyrinthine" structure. Oriented crystallization of tantalum is observed with precipitation on heated substrates. The resistivity of the films decreases with an increase in substrate temperature. No β -tantalum is observed in the films. Electron bombardment of the substrate surface changes the conditions of film formation. I. M.

1/1

- 113 -

USSR

UDC 539.216.2:621.315.61

IVANOV, R. D., ABALMAZOVA, M. G.

"Study of Electrical Inhomogeneities of Film Dielectrics by the Electron Mirror Method,"

Moscow, Radiotekhnika i Elektronika, Vol XVI, No 2, February 1971, pp 447-449.

Abstract: In this article it is demonstrated that studying the inhomogeneities of film dielectrics by the method of electron mirror microscopy permits quality control of the dielectric of a M-D-M film system and also explanation of the characteristic features of operation of film elements and provision for possible change during operation.

In the experiment Sb_2S_3 and Ta_2O_5 films were observed. Even when the dielectric films were obtained by various methods, defects having certain common features were detected on their surfaces. In addition to dirt pits and geometric inhomogeneities (including blind pores) the following defects were detected: 1) spots with lower conductivity than

USSR

IVANOV, R. D., et al., Radiotekhnika i Elektronika, Vol XVI, No 2,
~~February 1971~~, pp 447-449

the surrounding surface; 2) spots with higher conductivity; and 3) in the presence of a through pore in the dielectric, the upper electrode of the M-D-M system has a dip. The mechanisms of these defects and detection of them are described. Pictures are presented showing the defects, the variation in behavior of spots with high trap concentration as a function of U_{bias} and charge accumulation in a through pore in the operating mode of the M-D-M system.

2/2

- 62 -

Thin Films

UDC 537.523.5:621.79

USSR

IVANOV, R. D., TIKHONOV, A. A., UKRAINSKIY, YU. M., and
URAZALIYEV, U. S., Moscow

"Microstructure, Phase, and Chemical Composition of Thin Permalloy Films As Affected by Cathode-Plasma Sputtering Conditions and Negative Space Charge on Substrate Surface"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70,
pp 61-68

Abstract: The authors obtained films on both flat and cylindrical substrates using an apparatus based on the three-electrode system principle, employing either a glow-discharge cathode or a cathode-plasma sputtering regime. Permalloy 79NM was used as the target, ultrapure xenon as the process gas. The structural properties and chemical composition of the films were studied by electron microscopy (size of the crystallites on the film surface), electron diffraction (phase composition of a film on the surface), x-ray diffraction analysis (phase composition and lattice spacing of phase components according to the film volume)

1/3

USSR

IVANOV, R. D., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 61-68

and x-ray fluorescence analysis (overall content of alloy components in a multicomponent target and film).

An increase in the target potential results in a sharp increase in the average crystallite size, as well as partially oriented crystallization of the films. Gamma-phase crystallites with {110} planes are parallel to the substrate surface. In addition to the gamma phase, a constant impurity in the films under all cathode-plasma sputtering conditions is antiferromagnetic NiO with a polycrystalline structure and a more highly dispersed microstructure than ferromagnetic gamma-phase crystals. There is a quantitative increase in NiO with increased target potential. There is a clearly pronounced tendency towards increased iron content with increased target potential. Iron enrichment of the ferromagnetic gamma phase takes place, the enrichment being more pronounced the more intensive the cathode-plasma sputtering regime. The pressure during the sput-

2/3

- 67 -

USSR

IVANOV, R. D., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 61-68

tering process has a marked effect on the film dispersity, viz. the lower the pressure of the process gas and of the residual gases before letting in the process gas, the larger the crystallites. In cathode sputtering an inevitable result of the sputtering is a space charge on the surface of the isolated substrate. The charge potential was measured. It is shown that this charge reduces the rate of film deposition, affects the microstructure, and possibly promotes iron enrichment of the Permalloy films. The presence of oxide inclusions and the increased overall iron content of the film, especially the ferromagnetic gamma phase, cause increased coercive force and anisotropy field values and a positive magnetostriction sign.

3/3

USSR

~~EXTRACT~~
Oscar)

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USSR

UDC 621.374.33(088.8)

TYUSHKIN, V. A., IVANOV, R. F.

"Device for Quenching a Thyristor"

USSR Author's Certificate No 251073, Filed 4 Jul 68, Published 3 Feb 70, (From RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G279 P)

Translation: This author's certificate introduces a device for quenching a thyristor. The device contains a commuting capacitor and transformer, the primary winding of which is connected in series to the thyristor, and the secondary winding, in series to the capacitor. For simplification, a dynistor is connected between the point at which the capacitor plate and the secondary winding are joined and the thyristor cathode.

1/1

Pesticides

USSR

UDC 631.850.13

IVANOV, R. N., PAVLOVA, A. I., TUGOVA, M. N., and SATYBALDIYEV, T., Institute of Chemistry, Academy of Sciences Uzbek SSR

"The Effect of the Moisture Content of Ammophos Granules on Their Strength"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 70-72

Abstract: The mechanical strength of ammophos granules with a diameter of 1.5-6.0 mm in relation to their moisture content was investigated. The ammophos granules were produced by the liquified solids method. The moisture content varied in the 0.5-7.0% range. The strength of the granules (their resistance to deformation) decreased with their size because of decreasing density and also with the moisture content. Mathematical formulas that describe the relations established were derived. The work was carried out under the direction of M. M. Nabyev, Member of the Academy of Sciences Uzbek SSR.

1/1

Pesticides

USSR

UDC 631.81

SAIBOVA, M. T., IVANOV, R. N., BORUKHOV, I. A., and CHUMAKOV, F. P., Institute of Chemistry, Academy of Sciences, Uzbek SSR

"Effect of Magnesium Admixtures on the Physicochemical Properties of Ammophos"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 4, 1972, pp 23-25

Abstract: Ammophos is produced by the Almalyk Chemical Plant in Uzbekistan from Karatau phosphorites and their flotation concentrates containing up to 3.5% MgO. The presence of ammonium-magnesium phosphate exhibiting varying degrees of saturation with crystal hydrate moisture does not have a significant effect on the physical properties of ammophos which possesses a substantial moisture cocapacity. However, when the latter is mixed with ammonium nitrate or urea to obtain balanced fertilizers, the low hygroscopic point of dried ammophos may impair the quality of the fertilizer. For example, a mixture of granulated ammophos from apatite with ammonium nitrate and a moisture content of 0.6% has a hygroscopic point of 54 to 56%, compared with 38 to 42% for a mixture of ammophos from Karatau phosphorites with ammonium nitrate and the same moisture content. The optimum moisture content of a mixture of Karatau ammophos with ammonium nitrate or urea should not be less

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USSR

SAIBOVA, M. T., et al., Uzbekskiy Khimicheskiy Zhurnal, No 4, 1972, pp 23-25

than 2 to 2.5% thereby preserving good physical properties along with the highest hygroscopic point (52 to 54%). Further drying of these fertilizers would be economically undesirable and also sharply increase their hygroscopicity.

2/2

- 27 -

USSR

UDC 632.95

SEMEKOVA, L. N., IVANOV, R. II., CHUMAKOV, F. P., and ZAGRANICHNAYA, V. A.

"Study of the Possibility of Combining Karatau Ammophos with Insecticides"

V sb. Khimiya tekhnol. mineral'n. udobr. (The Chemistry and Technology of Chemical Fertilizers -- collection of works), Tashkent, "Fan," 1971, pp 107-109 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13R473 by T. A. Belyayeva)

Translation: Three component pesticide-fertilizer mixtures are obtained by "gamma" applying rogor (I) and γ -HCCN (mixture A) or rogor and chlorophos (II) (mixture B) to the surface of granulated ammophos by means of an GSKh-2 machine. There was no change in the concentration of I and γ -HCCN during storage of mixture A for two months. In mixture B II rapidly decomposes and I is slowly hydrolyzed. Addition of a 40% emulsion concentrate of I and commercial γ -HCCN improves the physicochemical and physicomachanical properties of chemical fertilizers (hygroscopicity, moisture capacity, caking capacity).

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USSR

UDC 631.89+632

IVANOV, R. N., SEMENOVA, L. N., PAVLOVA, A. I., CHUMAROV, F. P., Chemistry
Institute of the Uzbek SSR Academy of Sciences

"Properties of Ammophos Granules with a Dalapone Shell"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal No 3, 1972, pp 5-6

Abstract: An apparatus with a fluidized bed was used to obtain a combined fertilizer made of ammophos with a 0.1-0.2 mm thick shell of the herbicide, dalapone. The structural and operating characteristics of the unit with an output capacity of 1,500 kg/hour with a 1 m² screen are described. The hygroscopic point of the fertilizers determined by the exsiccator method [N. Ye. Pestov, et al., ZhKhP, No 12, 1951] corresponded to 59-61%. In all cases ammophos with dalapone absorbed moisture faster than pure ammophos. The results of field testing by the Scientific Research Institute of Plant Protection demonstrate that the compound does not lower the germination of cotton seed but suppresses weeds. The cotton harvest was improved by 2-2.5 centners/hectare.

1/1

Nuclear Science and Technology

USSR

KARALOVA, Z. K., PALEY, P. N., IVANOV, R. N., GASESATRIYA, V. YA., and
PYZHOVA, Z. I.

"Investigation of Protactinium and Uranium Accumulation by Thermal Neutron Irradiation of Th^{230} and Th^{232} "

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 23, No 3, Mar 70, pp 199-201

Abstract: An investigation was made to determine the accumulation of protactinium and uranium isotopes, and the burn-up of thorium isotopes during the irradiation of specimens with an isotope ratio $\text{Th}^{230}/\text{Th}^{232} = 1.482$ by a 1×10^{15} neutron/cm² · sec flux of thermal neutrons. The experimental procedure and technique are described in detail. It is shown that 3.5% of the original Th^{230} was transformed into Pa^{231} by the irradiation of the thorium specimen with a 1.482 isotope ratio for 10 periods of 24 hours each by a 1×10^{15} neutron/cm² · sec flux of thermal neutrons. The isotope ratio $\text{Th}^{232}/\text{Th}^{230}$ increased from 1.484 to 1.557, which is connected to the more rapid burn-up of Th^{230} than of Th^{232} . The effective radiation capture cross sections of Th^{230} , Pa^{231} , and U^{232} , calculated from the experimental data are 78.5, 12, 280, and 170 barns, respectively. The obtained results were used to calculate the Pa^{231} accumulation for a given 1/2

USSR

KAPALOVA, Z. K. et al, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 199-201

Th²³⁰ in suspension as a function of integral neutron flux. The maximum Pa²³¹ yield at a 1×10^{15} neutron/cm² . sec thermal neutron flux density after 100 effective periods of 24 hours was about 26%. Orig. art. has: 3 figures, 1 table, and 4 references.

2/2

USSR

UDC 539.4:621.81

IVANOV, S. I.

"On the Problem of the Breakdown of Parts From Residual Stresses"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, No. 53, pp 84-91 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1367)

Translation: Residual stresses in a rectangular plate are investigated and it is proposed that the deformations, being the reason for their rise, change only over the thickness of the plate. The basic residual stresses are considered known and the remaining stresses are equal to zero over the entire region, excluding the boundary zone. Close to the boundary of the plate the stress state becomes volumetric. To study the additional volumetric stresses the following two problems are solved: (a) a plate with basic residual stresses is loaded along the edge by forces varying according to the law for basic residual stresses; (b) a plate without stresses is loaded along the edge by the same forces. The difference in these two solutions gives the stress state close to the boundary. In studying the boundary zone it is considered possible to examine instead of a plate a beam of width equal to the thickness of the plate and in determining the additional volumetric stresses it is possible to restrict the consideration to the solution of a plane problem in elasticity theory. R. A. Gulyanov.

1/1

- 89 -

Stress Analysis and Stability Studies

USSR

FOKIN, V. G., IVANOV, S. I.

"Method of Strips for Investigation of Residual Stresses in Multilayer Plates"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], No 53, 1971, pp 16-32, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V519 by O. F. Chernyavskiy).

Translation: A multilayer plate is studied, composed of materials with various elastic properties, in the case when the residual stresses change only through the thickness of the plate. In order to determine the normal and tangential stresses directed parallel to the surface of the plate, strips are cut from the plate, in which layers are then removed with measurement of the bending and twisting angle. Relationships are produced allowing the results of measurement to be used to calculate the normal and tangential residual stresses. The results of the investigation of two strips cut in mutually perpendicular directions are used to determine the normal residual stresses. One broad strip (with width to height ratio at least five) or three narrow strips are used to determine tangential stresses.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIENCE OF THE INSTITUTE IN THE TREATMENT OF SPINE FRACTURES -U-
AUTHOR--(02)-TINCHURINA, G., IVANOV, S.I. I
COUNTRY OF INFO--USSR
SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 12-15
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BONE FRACTURE, ORTHOPEDIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0904 STEP NO--UR/9115/70/000/006/0012/0015
CIRC ACCESSION NO--AP0129969

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129969

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF A 10 YEAR EXPERIENCE WITH 467 PATIENTS WITH UNCOMPLICATED COMPRESSION FRACTURES OF THE SPINE AT THE KAZAN RESEARCH INSTITUTE OF TRAUMATOLOGY AND ORTHOPAEDICS IS PRESENTED. THE LATE RESULTS OF TREATMENT HAVE BEEN STUDIED IN 113 PATIENTS WITH FOLLOW UP FROM 1 TO 13 YEARS. IT WAS FOUND THAT: (1) COMPRESSION FRACTURES CONSTITUTE 79.6PERCENT OF ALL SPINE FRACTURES AND BELONG TO THE NUMBER OF SEVERE INJURIES RESULTING IN PROLONGED DISABLEMENT (FUNCTIONAL TREATMENT, 206, IMMOBILIZATION, 239 DAYS), AND NOT INVREQUENTLY STABLE INVALIDITY (1.8PERCENT). (2) THE RESULTS OF TREATMENT APPEAR TO LARGELY DEPEND ON THE EMPLOYED METHODS OF TREATMENT. OF THE CONSERVATIVE METHODS OF TREATMENT, THE FUNCTIONAL METHOD IS THE MOSTPHYSIOLOGICAL FOLLOWED BY GOOD LATE RESULTS AND MORE SHORT TERMS OF DISABILITY. RECOMMENDATIONS ARE SUBMITTED WITH RESPECT TO USE OF FUNCTIONAL AND IMMOBILIZATION METHODS. FACILITY: KAZANSKOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED

USSR

UDC 911.3:616.981.452(574.11)

SHEVCHENKO, V. L., ALTUKHOV, A. A., IVANOV, S. I., YERZHANOV, S. T.,
GRAZHDANOV, A. K., KAYMASHNIKOV, V. I., and MEDZYKOVSKIY, G. A.

"Isolation of a Culture of Plague Bacteria in the Spring of 1968 on the North-east Border of the Volga-Ural Sands"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works), Saratov, No 4(14), 1970, pp 135-138 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36.115)

Translation: The conditions of isolation and results of a study of two strains of plague bacteria in the natural landmark area of Annar, the Furmanovskiy rayon of Uralskiy Oblast are described. Both strains were isolated in a region in which no epizootic diseases have been recorded for more than 20 years and in which great gerbils are almost completely nonexistent. The reduced virulence, as well as some cultural and biochemical characteristics of the cultures studied, clearly differentiate them from the earlier isolated strains on the Volga-Ural Sands both in peak epizootic periods as well as in the inter-epizootic years.

1/1

- 36 -

USSR

UDC 911.3:616.981.452(47)

SHEVCHENKO, V. L., IVANOV, S. I., ALTUKHOV, A. A., and BERSZHNOV, A. Z.

"Method and Tactics of Epizootiologic Survey for Plague in the Volga-Ural Sands"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of Works), Saratov, No 4(14), 1970, pp 129-134 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36.116)

Translation: Epizootics of plague in the Volga-Ural interfluvial area are most frequent and constant over a wide area extending from the southwestern boundary of the sands through the central part to the north-eastern edge. The significance of the little suslik in the transfer of the pathogen during the summer months is reconfirmed. A scheme of fundamental methods for the examination of plague foci during the period of the interepizootic lull and during active periods is presented. Evaluation of the methods used for laboratory research is presented.

1/1

USSR

KOPPE, V.T., KOVAL', A.G., FIZGEYER, B.M., FOGEL', Ya.M., IVANOV, S.I.,
Kharkov State University

"Measurement of the Effective Cross Sections and Excitation Functions for
Bands of the First Negative System of the N_2^+ Molecular Ion With the Excita-
tion of Nitrogen by Fast Electrons"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 12, 1970, pp
1878-1883

Abstract: The effective cross section for the (0-0), (0-1), (0-2), (0-3),
(1-2) (1-3), and (1-4) bands of the first negative system of the N_2^+ ion
and the multiplet lines $\lambda = 5001 - 5005 \text{ \AA}$ in the NII spectrum were measured at
energies between 0.5 and 20 kev. The nitrogen was excited by electrons
with energies between 0.5 and 20 kev. In the region of overlapping energies
the experimental effective cross sections are in good agreement with the data
of quoted sources. A formula is presented which satisfactorily describes
the course of the excitation functions of the bands and lines investigated
at energies between 0.6 and 20 kev. 3 figures, 1 table, 10 bibliographic
entries.

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- 45 -

USSR

IVANOV, S. N., MANSFEL'D, G. D., Institute of Radio Engineering and Electronics,
~~Academy of Sciences~~ USSR, Moscow

"Interaction of Sound, at a Frequency of 9.4 GHz, With Hot Electrons in n-InSb"

Leningrad, Fizika Tverdogo Tela, No. 5, May 71, pp 1288-1292

Abstract: The characteristic features of electron absorption of hypersonic waves at a frequency of 9.4 GHz in indium antimonide crystals at liquid helium temperatures were investigated in constant and pulsed electric fields. It was known that the interesting phenomenon of the heating of free electrons by an electric field is very clearly expressed in this temperature region, and it was expected that the functional relationship between electron absorption and the field would be very complex since the degree of electron absorption when a field $\mathcal{E}_0(E)$ is applied to the crystal is determined not only by the drift of carriers but also by their heating. It is shown that in slightly degenerate indium antimonide the heating of an electron gas by a field determines to a considerable degree the electron absorption of sound. A quantitative interpretation of the results is

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IVANOV, S. N., MANSFEL'D, G. D., Fizika tverdogo tela, No. 5, May 71, pp 1288-1290

given. It is concluded from the experiments that consideration of the heating of an electron gas by an electric field in slightly degenerate indium antimonide at helium temperatures makes it possible to interpret uniquely the results of experiments on the effect of an electric field on electron absorption of sound within the framework of existing theories. According to the data obtained here, the heating of an electron gas considerably lowers the effectiveness of electron-phonon interaction, although it is still possible to obtain very considerable coefficients of electron amplification, which in these experiments were as high as 60 db/cm.

2/2

- 41 -

1/2 021
UNCLASSIFIED
TITLE--EXCITATION OF SOUND IN THE NEAR SURFACE LAYER OF GALLIUM ARSENIDE
CRYSTALS -U-
AUTHOR--(02)-~~IVANOV~~ S.N., MANSFELD, G.D.
PROCESSING DATE--18SEP70
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 40-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--GALLIUM ARSENIDE, SURFACE PROPERTY, CRYSTAL LATTICE STRUCTURE,
ELECTROACOUSTICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/0998
STEP NO--UR/0449/70/004/001/0040/0044
CIRC ACCESSION NO--AP0053918
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053918

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ELECTROACOUSTIC TRANSFORMATIONS IN THE INHERENT DEPLETED NEAR SURFACE LAYER OF LOW RESISTANCE GAAS AT 0.4-1.75 KHZ WERE STUDIED. BY SUPERPOSITION OF AN EXTERNAL FIELD (FIELD EFFECT), IT IS EVIDENTLY POSSIBLE TO RECONSTRUCT SUCH TRANSFORMATION OVER A WIDE FREQUENCY RANGE. THE LATTICE ABSORPTION OF SHEAR WAVES DISTRIBUTED ALONG THE (110) AXIS OF BAAS CRYSTALS WAS MEASURED.

UNCLASSIFIED

1/2 008
UNCLASSIFIED
TITLE--MECHANISM OF FILLER RETENTION IN PAPER --U- PROCESSING DATE--04DEC70
AUTHOR--(02)-IVANOV, S.N., LYADOVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ZELLST. PAPIER (LEIPZIG) 1970, 19(4), 101-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TALC, KAOLIN, FILLER, PAPER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/1350
CIRC ACCESSION NO--AP0138360
STEP NO--GE/0091/70/019/004/0101/0105
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138360

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RETENTION OF TALC AND KAOLIN
FILLERS IN SULFITE PULP REACHED A MAX. AT AL SUB2 (SO SUB4) SUB3 ADDNS.
OF 1.5PERCENT. THE ADDN. HAD THE LARGEST EFFECT AT PARTICLE SIZES 1-2
MU AND FOR POLYDISPERSE FILLERS CONTG. LARGE AMTS. OF SMALLER PARTICLES.
RETENTION WAS HIGHEST AT PARTICLE SIZES GREATER THAN 20 MU, AND WAS NOT
GREATLY AFFECTED BY AL SUB2 (SO SUB4) SUB3 WAS ATTRIBUTED TO REACHING
THE ISOELEC. POINT FOR KAOLIN AND A STRONG REON. IN THE NEG. CHARGE OF
TALC. THE MIN. RETENTION AT PARTICLE SIZE 1-5 MU WAS ATTRIBUTED TO A
DECREASE IN MECH. RETENTION, WHICH WAS NOT COMPENSATED FOR BY AN
INCREASE IN COLLOIDAL RETENTION BECAUSE THE PARTICLES WERE NOT OF
COLLOIDAL SIZE. INCREASING THE PARTICLE SIZE ABOVE A CRIT. DIAM. GAVE A
PREDOMINANTLY "FILTER" EFFECT, AND THE RETENTION OF PARTICLES OF SIZE
GREATER THAN THAT DIAM. WAS MAINLY MECH. VARIOUS FILLER RETENTION
MECHANISMS WERE DISCUSSED. FACILITY: HOLZTECHNOL. AKAD. KIROV,
LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 534.232.46-8

GULYAYEV, Yu.V., IVANOV, S.N., MANSPEL'D, G.D., PRCKLOV, V.V., STANKOVSKIY, B.A.,
STEPANOV, B.G. [In-t radiotekhn. i radioelektron. AN SSSR--Institute Of Radio
Engineering And Radio Electronics, AS, USSR]

"Ultrasonic High-Frequency Transducer"

USSR Author's Certificate No 250554, Filed 5 July 67, Published 16 Jan 70 (from
RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A347P)

Translation: An ultrasonic high-frequency transducer patented for use in ultrasonic
delay lines and ultrasonic amplifiers contains a resonator and a piezosemiconductor
crystal involving a layer stripped of charge carriers. With the object of obtaining
ultrasonic oscillations of ultra-high frequency, the piezosemiconductor crystal is
connected with the central core of the resonator by a thin dielectric layer (e.g.,
mica) and a controlled voltage source is connected to the central core of the
resonator and to the crystal. 1 ill. L.K.

1/1

1/2 015
UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--EFFECT OF SOME AMINO ACIDS ON THE CRYSTALLIZATION OF SUCROSE -U-
AUTHOR--(02)--IVANOV, S.Z., OROBINSKIY, I.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 168-70
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FOOD TECHNOLOGY, SUCROSE, CRYSTALLIZATION, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0794
STEP NO--UR/0322/70/000/002/0168/0170
CIRC ACCESSION NO--AT0131388
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AT0131388
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAB. EXPTS. WERE CONDUCTED TO DET.
THE EFFECTS OF DIFFERENT AMINO ACIDS ON THE CRYSTN. RATE OF SUCROSE FROM
SUGAR SIRUP. THE RESULTS INDICATED THAT SOME OF THE AMINO ACIDS
(GLYCINE, SERINE, VALINE, AND LYSINE) INCREASED THE RATE OF CRYSTN. AND
OTHERS (GLUTAMIC ACID, ASPARTIC ACID, AND ALANINE) REDUCED THE RATE OF
CRYSTN. CHANGES IN THE CRYSTN. TEMP. FROM 40 TO 60DEGREES INCREASED THE
CRYSTN. RATE IN THE SAME WAY FOR ALL AMINO ACIDS. THE INCREASE IN THE
CONCN. OF GLUTAMIC AND ASPARTIC ACIDS RETARDED THE CRYSTN. OF SUCROSE.
FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

Acc. Nr:

AP0050805

Abstracting Service:

CHEMICAL ABST. 5-72

Ref. Code:

4R0339

102066e Role of buffering in the decomposition of sucrose. Ivanov, S. Z.; Mil'kova, Z. A.; Sapronov, A. R. (Voronezh. Tekhnol. Inst., Voronezh, USSR). *Sakh. Prom.* 1970, 44(1), 31-4 (Russ). Solns. 0.5M in sucrose and 0.17M in nonsugars, with original pH 7.5, were refluxed. The decompn. was followed by detn. of dry matter by refractometry, detn. of pH at 90° with a pH meter LPU-01 and detn. of sucrose by iodometry. The decompn. is characterized by S-curves which fit the equations for autocatalytic processes. The changes in pH follow the same pattern. Autohydrolysis is catalyzed by NaCl and glucose and inhibited by melanoids, the products of alk. decompn. of invert sugar and by glutamic acid. The effect of the nonsugar complex was examd. by heating a sugar soln. with added molasses at pH 7. Hydrolysis was inhibited with decreasing purity of the sugar.

Olaf Thomsen

REEL/FRAME

19810807

Acc. Nr:

AP0050806

Abstracting Service:

CHEMICAL ABST. 5-7c

Ref. Code:

4R 0339

102071c Visible and actual pH and pOH of juice-sirup in a concentrate. Pronina, V. A.; Ivanov, S. Z. (Voronezh. Tekhnol. Inst., Voronezh, USSR). *Sakh. Prom.* 1970, 44(1), 23-5 (Russ). Samples were drawn from all stages of evaporators in two factories. Reducing sugars, amino N, and color were detd., as were pH at 20 and at 95°. pH at the operating temp. was calcd. The lower pH at the higher temp. caused a considerable increase in amt. of reducing sugars. Olaf Thomsen

REEL/FAME

19810808

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PLASTIC RESECTION OF THE STOMACH AND GASTRECTOMY -U-

AUTHOR--(02)-IVANOV, V.A., GOLDIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 25-30

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, JEJUNUM, PANCREAS, PLASTIC SURGERY, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1241

STEP NO--UR/0053/70/000/004/0025/0030

CIRC ACCESSION NO--AP0054136

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 020
CIRC ACCESSION NO--AP0054136

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORO ELABORATED AND TESTED IN THE CLINIC A TECHNIQUE OF GASTRIC RESECTION AND GASTRECTOMY WITH INCLUSION OF THE DUODENUM INTERSECTED IN ONE PLACE BY A LOOP OF THE JEJUNUM, GASTROENTEROSTOMY IS ESTABLISHED AT THE LOWER CURVATURE. OUT OF 55 GASTRECTOMIES 25 WERE PERFORMED WITH INCLUSION OF THE DUODENUM. IN THE POSTOPERATIVE PERIOD AFTER PLASTIC OPERATIONS 3 PATIENTS DIED: 2 AS THE RESULT OF PANCREONECROSIS AND 1, DUE TO FAILURE OF THE JEJUNODUODENOSTOMY. OUT OF 101 PARTIAL RESECTIONS OF THE STOMACH 35 PLASTIC OPERATIONS WERE PERFORMED WITH ONE LETHAL OUTCOME. THE FUNCTIONAL RESULTS, STUDIED IN THE IMMEDIATE AND REMOTE PERIODS, PROVED TO BE MORE SATISFACTORY AFTER OPERATIONS WITH INCLUSION OF THE DUODENUM.

UNCLASSIFIED

USSR

UDC 911.3:616.981.452

IVANOV, V. A., KRAMINSKIY, V. A., and MARIN, S. N.

"Tactics of Epidemiological Examination of Natural Foci of the Plague"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of Works), Saratov, No 4(14), 1970, pp 41-44 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36.108) by V. Dobrokhotoy.

Translation: Epidemiological reconnaissance of the territory includes the following tasks: epizootiological and zooparasitological examination, epidemiological monitoring of the population, epidemio-geographic study of foci and observation of the disease incidence among camels so as not to transfer the disease to them. The chief problems for each one of these areas are outlined. Tactical approaches to epidemiological study are determined by characteristics of epizootic activity at different foci. In addition to this it is necessary to distinguish natural foci with stable activity (northern desert subzone) and foci with periodic activity (southern subzone).

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Radiobiology

USSR

UDC 616-001.28-036.8-07:616.831-005-073.7.311

GLAZUNOV, I. S., GRAFOV, A. A., IVANOV, V. A., and BRYZHAKHIN, G. B.

"Cerebral Circulation in Man Afflicted With Acute Radiation Sickness"

Moscow, Meditsinskaya Radiologiya, Vol 16, No 3, Mar 71, pp 53-59

Abstract: Data are presented on the state of circulation and tonus of the cerebral vessels in 10 patients afflicted with acute radiation sickness in the moderate and severe stage. The observations were made 5-12 years from the onset of the disease. Acute illness emerged in these subjects as a result of a single dose of gamma-rays and neutrons in a total amount of 270 to 980 rem. Duration of the exposure varied from 1 sec to 20 min. The patients were 30-49 years of age during the study. Rheoencephalography and orbital plethysmography were used in combination with an appropriate somato-neurological examination. It was established that the dose of ionizing radiation and in connection with it the severity of the illness affect the cerebral circulation. The more severe the illness is, the most pronounced is the drop in regional or zonal blood circulation at some time after start of the illness. Data from orbital plethysmography showed that the volume pulse of the eye which characterizes the state of the tonus of the eye arteries was $16.1 \pm 8.6 \text{ mm}^3$ for the patients afflicted with acute radiation

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USSR

GLAZUNOV, I. S., et al., Meditsinskaya Radiologiya, Vol 16, No 3, Mar 71, pp 53-59

sickness of moderate degree and $-5.1 \pm 1.6 \text{ mm}^3$ for the patients suffering from acute serious radiation sickness. The results obtained indicated that the adhesive-elastic properties of the cerebral vessels are enhanced with subsequently developing chronic vascular insufficiency. The neurological state of the patients included general symptoms of cerebral disorders such as headache, oculovestibular vertigo, as well as signs of microorganic disturbances of the central nervous system (nystagmus, reflexes of oral automatism, mild pyramid insufficiency). From the general physiological aspects, the data obtained indicated a premature aging of the body taking place as a result of acute radiation sickness. These signs included premature greying of the hair, a sharp decline in the libido, trophic skin disorders, and hardening of the crystalline lenses with development of radiation cataracts.

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- 24 -

USSR

UDC 681.323(088.8)(47)

PALADIN, A. V., IVANOV, V. A., GULYAYEV, V. A., and SIVACHENKO, P. M.,
(Institute of Cybernetics of the Ukrainian SSR Academy of Sciences)

"A Digital Control Automaton with Monitoring"

USSR Author's Certificate No 357563, kl G 06 f 11/08, filed 22 Jun 70,
published 13 Dec 72 (from RZh Avtomatika Telemekhanika i Vychislitel'naya
Tekhnika, No 10, Oct 73, Abstract No 10 B191 P)

Translation: The authors propose a digital control automaton with monitoring, containing memory circuits, connected with hybrid circuits and a flipflop output unit; logical circuits; and flipflops. The instrument is different in that the efficiency of monitoring is improved by dividing the flipflops of the output unit into small n-space groups, with the zero outputs of the output unit flipflops in each group connected to the inputs of the corresponding multi-input "AND" circuits.

The outputs of all the multi-input "AND" circuits are connected through inverters in pairs to the inputs of the dual input "AND" circuits, the outputs of which are connected to the inputs of "OR" circuits. The outputs of the "OR" circuits are connected to the input of the monitoring flipflop. The zero out-
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USSR

PALADIN, A. V., et al., USSR Author's Certificate No 357563, kl G 06 f 11/08, filed 22 Jun 70, published 13 Dec 72

puts of similar types of flipflops in the output unit of all groups are connected to the inputs of small n-input "AND" circuits, connected to the zero inputs of the recording flipflops, the outputs of which are connected to the inputs of a parity checking circuit.

The output of the parity checking circuit and the zero output of the monitoring flipflop are connected to the inputs of the output "AND" circuit connected to the zero input of the final flipflop. One of the outputs of the memory circuits is connected to the input of a correction flipflop, the outputs of which are connected to the inputs of the parity checking circuit. One illustration.

2/2

- 4 -

USSR

MALINOVSKIY, B. N., PALAGIN, A. V. and IVANOV, V. A.

"Microprogram Control"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1973, No 1, pp 59-65 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V640).

Translation: The primary aspects of the theory and practice of micro-programming are studied, a classification is presented of the control devices using the principles of microprogramming, and an approach is suggested to their synthesis. The materials of the article are based on analysis of a number of foreign and domestic sources, and also the results of studies performed by the authors of the article.

Authors' view

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- 60 -

USSR

UDC 617-001.28-06:616.8

GLAZUNOV, I. S., BLAGOVESHCHENSKAYA, V. V., IVANOV, V. A., and MALAKHOVA, V. V.,
Moscow

"Clinical Characteristics and Some Problems of the Pathogenesis of Neurological
Disturbances in Severe Forms of Acute Radiation Sickness"

Moscow, Zhurnal Nevropatologii i Psikhiiatrii imeni S.S. Korsakov, Vol 73,
Vyp 2, 1973, pp 165-168

Abstract: Nervous system pathology of eight patients receiving 400-900 rem
gamma or neutron radiation is described. In the first stage acuteness could
be diagnosed on the basis of the intensity of the initial reaction and the
time of its appearance. Meningeal and general brain symptoms were most fre-
quently characteristic of the intensity. Judging by them all patients had
either mild or more pronounced radiation sickness. In the second stage these
symptoms became less pronounced but persisted. In the critical third stage
these symptoms intensified again, and various degrees of cerebral edema
developed (the degree and the rapidity of onset depending on radiation dose).
The whole range of neurological disruptions in the severe form of radiation
sickness is described as a parenchymatic-meningeal syndrome of varying severity.
Recovery was extremely slow, especially from vegetative-vascular instability
accompanied by vestibular-vegetative reactions and asthenia. Rheoencephalo-
graphic studies supported the idea that such disruptions of the central nervous
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USSR

GLAZUNOV, I. S., et al., Zhurnal Nevropatologii i Psikhatrii imeni
S. S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

system are a product of vascular disturbances and changes in vessel wall permeability. Venous outflow from the brain cavity was found to be encumbered very early, prior to appearance of edematic symptoms. Such studies also revealed considerable damage to the brain ventricular system. Thus in severe and extremely severe forms of radiation sickness the damage to various nervous system structures is considerable and can be direct or indirect.

2/2

- 72 -

Thin Films

USSR

UDC 669.1.539.216.2

KAZAKOV, V. G., KARABANOVA, V. P., BURAVIKHIN, V. A., SVETSOV, M. M.,
P'YAVCHUK, N. N., and IVANOV, V. A., Irkutsk State Pedagogical Institute

"Effect of Elastic Stresses on Critical Fields of Thin Ferronickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 864-866

Abstract: A study was made of the behavior of the coercive force H_c of thin magnetic ferronickel films under the action of stresses, since H_c essentially affects the quasi-static and pulsed remagnetization processes. The value of H_c in most cases is determined by the field of starting boundaries. Thus, dependence of H_c boundaries on the magnitude of elastic stresses in 75% Ni and 25% Fe films of different thicknesses (450, 800 and 1100 Å) was experimentally investigated. The results are discussed by reference to diagrams showing the deformation dependence of the starting field of domain boundaries (H_{st}) and the width of the domain boundary. The dependence of H_{st} on the magnitude of applied stresses can be explained by the character of $1/2$

USSR

KAZAKOV, V. G., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 4,
Apr 72, pp 864-866

structural changes of domain boundaries. Three illustrations, six
bibliographic references.

2/2

- 48 -

USSR

UDC 531.768(047)

IVANOV, V. A., Candidate of Technical Sciences, LEEDANOV, S. P., Engineer

"Angular Accelerometers"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 31-32

Abstract: Angular accelerometers are divided into two groups: those for measuring the parameters of relative motion and those for measuring the parameters of absolute motion. Schematics and the technical specifications are presented for angular accelerometers of the first group with a solid inertial element and angular accelerometers of the second group with solid and inertial elements. The functioning of the accelerometers is described. References are given to the foreign and Soviet publications in which the mentioned accelerometers were introduced and tested.

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- 117 -

USSR

UDC 678.5:620.173

ROMANENKOV, I. G. and IVANOV, V. A., Central Scientific Research Institute
of Building Structures imeni Kucherenko

"Influence of the Dimensions of the Specimens Upon Strength and Deformability
During the Compression of Honeycomb Boards"

Moscow, Zavodskaya Laboratoriya, No 5, 1972, pp 603-606

Abstract: The character of the influence of the dimensions of a specimen, namely the cross-section area and the height, upon the ultimate strength and the modulus of elasticity during the compression of fabric- and paper-base honeycomb boards, is established. An empirical equation is proposed, which makes it possible satisfactorily to approximate the experimental data, and to compare results obtained during the testing of specimens of different dimensions. It is pointed out that analagous relationships were also obtained with the stretching of honeycomb boards. 3 figures. 2 tables, 3 references.

1/1

USSR

ALIKHANYAN, A. I., ASATIANI, T. L., AVAKYAN, K. M., ZHIROVA, L. A.,
IVANOV, V. A., KRISHCHYAN, V. M., MATEVOSYAN, E. M.

"Measurement Accuracy of Charged Particle Pulses in Wide-Gap
Spark Chambers"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61,
No 4(10), Oct 71, pp 1273-1275

Abstract: The purpose of this article is to show how the accuracy
of these pulse measurements can be improved. Corrections which
must be made to achieve this accuracy are based on results ob-
tained in an earlier paper (A. I. Alikhanyan, et al, 12-ya
Mezhdunarodnaya konferentsiya po fizike vysokikh energiy -- Twelfth
International Conference on High-energy Physics -- Dubna, 1964, 2,
Atomizdat, 1966, p 303) and were derived from new equipment with
better parameters. These involved a reduction in the total delay
time of up to 230 ns for applying the high-voltage pulses to the
chamber, a reduction of up to 2 ± 0.5 ns in the rise time of the
high-voltage pulse, and a high degree of electric field uniformity
at the edges of the chamber through the use of distributed resis-
tances and capacitances. Tables of the characteristics of vari-
ous types of chamber are given. Analysis of the errors shows that
1/2

- 103 -

CHANYAN, A. I. et al, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61, No 4(10), Oct 71, pp 1273-1275

The measurement accuracy of the new equipment is limited by the optical distortion. A table of corrections for these distortions is provided. Gratitude is expressed to V. N. Semenyushkin, N. I. Novikov, A. P. Pisarev, Yu. V. Kulikov, L. N. Strunov, and I. N. Golutvin for performing the required experiments in the OIYaI (Joint Institute of Nuclear Research). The authors are associated with the Yerevan Physical Institute.

USSR

UDC 533.922

IVANOV, V.A., TAMOYKIN, V.V. [Scientific-Technical Radiophysics Institute]

"The Correlation Theory Of A Back-Scattering Field In A Magnetoactive Plasma"

Izv. VUZ: Radiofizika, Vol XV, No 2, Feb 1972, pp 172-182

Abstract: The problem is considered of the back scattering of electromagnetic waves in an inhomogeneous magnetoactive plasma which contains random inhomogeneities of the electron concentration. A calculation is made with the narrow radiation pattern of the receiving and transmitting antennae taken into account. An expression is found for the back-scattering field. The autocorrelation and the function of cross-correlation of ordinary and non-ordinary waves are calculated for the case of weak gyrotropia ($u \ll 1$). The correlation of the amplitudes and phase of the normal waves is determined, and the relation of the average phase difference $\bar{\theta}_p$ and spread θ_p with reference to the average value $\bar{\theta}_p - \bar{\theta}_p$ [the bar indicates statistical averaging] is found with the average characteristics of the medium. It is shown that measurement of the magnitude

$\theta_p - \bar{\theta}_p$ makes it possible to determine the local concentration of electrons in the dispersion volume. The authors thank N.G. Denisov for discussion of the work and for valuable comments. 1 fig. 14 ref. Received by editors, 19 May 1971.
1/1

- 105 -

- USSR

UDC: 551.510.535

BENEDIKTOV, Ye. A., GRISHKEVICH, L. V., IVANOV, V. A., and
KOMRAKOV, G. P.

"Some Statistical Characteristics of Signals Partially Reflected
from the D Region of the Ionosphere"

Gor'kiy, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 504-
509

Abstract: This paper offers experimentally obtained information regarding the statistical characteristics of partially reflected radio waves and its possible interpretation through a model of "frozen" heterogeneities moving in a horizontal direction. The experimental equipment consisted of a transmitter operating on a frequency of 5.75 MHz, with a pulse power of the order of 750 kW and a pulse width of 50 μ s repeated at a 50-Hz rate. A four half-wave dipole, the antenna had a directional diagram of about 56° by 56° at a half-power level and was linearly polarized. The receiver antenna consisted of 36 pairs of crossed dipoles and had a 12° by 12° diagram, and was capable of picking up signals with linear and circular polarization. Auxiliary receiver antennas were also used. Experimental runs were made on separate days in the spring of 1970 and were repeated in March of 1971. Processing
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USSR

UDC: 551.510.535

BENEDIKTOV, Ye. A., et al, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 504-509

of the data consisted in obtaining the amplitude distribution function of the signals for various fixed altitudes, and in determining the autocorrelation amplitude functions. The authors express their gratitude to V. V. Tamoykin for his advice and to T. N. Fedoseyeva for her assistance with the computations. They are associated with the Scientific Research Radio Physics Institute.

2/2

- 108 -

IVANOV, V. A.

OPTIMIZATION OF THE PROCESS OF TUNGSTEN TRIOXIDE REDUCTION

ENG 67-201.21

Article by D. I. Lashovskiy, V. I. Terent'ev, V. A. Ivanov, V. I. Gurev,
Moscow Institute of Steel and Alloys, Department of Control and Automation
of Nonferrous and Rare Metal Production; Gzhonskizdat, Leningrad
VIZ, Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 20 May
1971, pp 132-137

The reduction of tungsten trioxide (WO_3) with hydrogen in furnaces with a rotating tube is a complex multifactor process that is virtually not amenable to deterministic description. To construct a statistical model for it, it is necessary to solve the question of how many and what kind of factors should be taken into consideration. An informal (intuitive) choice may lead to an increase in the number of tests in the selective experiment and to ineffective results in investigating the surface of response.

We used a statistical method of formalization of a priori information, which permits evaluating the comparative influence of the individual independent variables (factors) on the process of reduction [1].

A group of seven specialists has suggested ranking the X_i ($i = 1, 2, \dots, 17$) variables: X_1 is the amount of WO_3 immersed into the furnace, X_2 is the amount of hydrogen fed into the furnace, X_3 is the temperature of the third zone, X_4 is the temperature of the second zone, X_5 is the temperature of the first zone, X_6 is the angle of slope of the furnace tube, X_7 is the rate of rotation of the furnace tube, X_8 is the humidity of the hydrogen supplied, X_9 is the temperature of heating the hydrogen, X_{10} is the temperature of mechanism, X_{11} is the number of impacts of the shaking mechanism, X_{12} is the grain size of the immersed WO_3 , X_{13} is the bulk density of the WO_3 , X_{14} is the amount of oxygen in the WO_3 , X_{15} is the amount of polyhydrous in the WO_3 , X_{16} is the length of the furnace condenser, X_{17} is the number of furnace temperature zones in accordance with the degree of

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1 May 72

USSR

UDC 533.922

IVANOV, V. A., TAMOYKIN, V. V., Scientific Research Radio Physical Institute

"Correlation Theory of the Back-Scattering Field in a Magnetically Active Plasma"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 172-182

Abstract: A study was made of the problem of backscattering of electromagnetic waves in an inhomogeneous magnetically active plasma containing random inhomogeneities of the electron concentration. The study was performed under the assumption of narrow radiation patterns of the transmitting and receiving antennas. The time-space correlation functions of the field of individual normal waves and their mutual correlation were calculated. The effect of the inclination of the Earth's magnetic field on the statistical characteristics of the received signal was discovered.

The correlation of the amplitudes and phases of the normal waves was found on the basis of the derived formulas, and the relation of the mean phase difference $\bar{\theta}_p$ and the scattering θ_p with respect to the mean value $|\bar{\theta}_p - \theta_p|$ [the bar stands for statistical averaging] to the mean characteristics of the medium was discovered. Measuring the value of $|\bar{\theta}_p - \theta_p|$ permits determination

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USSR

IVANOV, V. A., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
Vol XV, No 2, 1972, pp 172-182

of the local electron concentration in the scattering space. The case of weak
gyrotropy was considered.

2/2

AP9049814

UR 0431

PRIMARY SOURCE: Izvestiya, AN ArmSSR. Fizika, Vol 4, Nr 1,
pp 53-57

THE FLUCTUATIONS OF THE TRACK BRIGHTNESS IN THE
STREAMER CHAMBER

T. L. ASATIANI, K. A. GAZARIAN, W. N. IMROW, V. A. IVANOV,
A. A. NAZARIAN

The analysis of the fluctuations of streamer track brightness is presented. It is shown that these fluctuations are mainly related to the energy losses, ionization. Method of identification of fractionally charged particles and multi-charged nuclei by counting the number of electrons on the streamer track is proposed.

4/1

1948 0125

19

USSR

UDC: 539.37

MARELOV, G. I., IL'GAMOV, M. A., and IVANOV, V. A.

"Deflections of Elastic Parallelepiped Under Action of Its Own Weight"

Kiev, Prikladnaya Mekhanika, Vol 7, No 12, 1971, pp 32-40

Abstract: The object of the paper is to compare alternate methods of setting up boundary equations.

The very long parallelepiped has one vertical face fixed and is subject to its own weight. The Z-axis of coordinates coincides with this face, the X-axis is normal to it and lays in the bottom face. The 2X cross-section is covered by a grid. Finite difference equations in matrix form are written for the nodal points of this grid.

Alternates 1 and 2. The derivatives of the stresses with respect to distance along the face are used as boundary conditions.

Alternate 3. Unilateral difference equations are used normal to the faces, central differences along the faces.

The general solutions of the difference equations are given. They are expanded in series.

The numerical solutions of the deflections and stresses for the three alternate methods are shown on graphs. Alternate 3 (dotted lines) is the closest to the analytical solution (full lines).

1/1

- 113 -

USSR

GULYAYEV, V. A., ~~IVANOV, V. A.~~, PALAGIN, A. V.

"Some Methods of Construction of Systems for Testing Control Automata Using Natural Redundancy"

Sistemy Avtomatich. upr. [Automatic Control Systems -- Collection of Works], Kiev, 1971, pp 58-63, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V495 by O. Belkin).

Translation: Known methods of testing automata are based on the use of the properties of correcting codes. The specifics are studied of the design of systems for testing control automata based on potential elements consisting of register structures. The control circuits are based on the use of natural redundancy. The effectiveness of the use of these systems depends on the natural redundancy, structure of the signals tested, method of representation of signals, etc. In many cases, the use of circuits with natural redundancy is most effective.

1/1

IVANOV, V. A.

OPTIMIZATION OF THE PROCESS OF TUNGSTEN TRIOXIDE REDUCTION

Article by D. I. Litovskiy, V. I. Tretyakov, V. A. Ivanov, V. I. Gulev,
Moscow Institute of Steel and Alloys, Department of Control and Automation
of Nonferrous and Rare Metal Production; Ordzhonikidze, Izvestiya
VUZ, Izvestiya Metallurgiya, Russian, No 6, 1971, signed to press 20 May
1971, pp 130-132

4 11 1971
mc 62-501.21

The reduction of tungsten trioxide (WO_3) with hydrogen in furnaces with a rotating tube is a complex multifactor process that is virtually not amenable to deterministic description. To construct a statistical model for it, it is necessary to solve the question of how many and what kind of factors should be taken into consideration. An informal (intuitive) choice may lead to an increase in the number of tests in the selective experiment and to ineffective results in investigating the surface of response.

We used a statistical method of formalization of a priori information, which permits evaluating the comparative influence of the individual independent variables (factors) on the process of reduction [1].

A group of seven specialists has suggested ranking the X_i ($i = 1, 2, \dots, 17$) variables: X_1 is the amount of WO_3 immersed into the furnace, X_2 is the amount of hydrogen fed into the furnace, X_3 is the temperature of the third zone, X_4 is the temperature of the second zone, X_5 is the temperature of the first zone, X_6 is the angle of slope of the furnace tube, X_7 is the rate of rotation of the furnace tube, X_8 is the humidity of the hydrogen supplied, X_9 is the temperature of heating the hydrogen, X_{10} is the temperature of heating the WO_3 , X_{11} is the number of impacts of the shaking mechanism, X_{12} is the grain size of the immersed WO_3 , X_{13} is the bulk density of the WO_3 , X_{14} is the amount of oxygen in the WO_3 , X_{15} is the amount of molybdenum in the WO_3 , X_{16} is the length of the furnace condenser, X_{17} is the number of furnace temperature zones in accordance with the degree of

USSR

UDC 681.3

GULYAYEV, V. A., IVANOV, V. A.

"Some Problems in the Testing of Digital Control Automata"

Kibernet. Tekhnika. Vyp. 6, [Cybernetic Equipment, No. 6--Collection of Works], Kiev, 1970, pp 14-21, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V611).

No Abstract.

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Acc. Nr.

AP0053898

Abstracting Service:
CHEMICAL ABST.

6-70

Ref. Code

UR0386

115059e High-temperature melting of argon. Stishov, S. M.; Makarenko, I. N.; Ivanov, V. A.; Fedosimov, V. I. (Inst. Kristallogr., Moscow, USSR). *Pis'ma Zh. Eksp. Teor. Fiz.* 1970, 11(1), 22-5 (Russ). Pressure-vol. (V) isotherms of Ar were exptl. detd. in a piezometer filled at 2000 atm at 291.6, 294.2, and 322°K. Changes in V (ΔV) and entropy (ΔS) on melting decrease with increase in the m.p. (T_m); ΔS approaches a const. value of ~ 2.13 cal/degree mole and ΔV follows the law $\Delta V = \gamma(T_m - T_0)^{-1/3}$ (γ and T_0 are consts.).

Karel A. Hlavaty

C.K.

REEL/FRAME

19830975

18

USSR

UDC 621.389.652

IVANKOV, V.A., KURYUNOV, A.V.

"Interaction Of Two Harmonic Signals During Amplification In A TWT"

V sb. Dokl. nauchno.-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968--1969 gg. Mosk. energ. in-t, 1970 g. Sekts. Radiotekhnicheskaya. Polisekts. Obshch. radiotekhniki (Report Of The Scientific Technical Conference On The Results Of Scientific-Research Work During 1968-1969. Moscow Power Engineering Institute. Radio Engineering Section. General Radio Engineering Subsection -- Collection Of Works), Moscow, 1970, pp 19-26 (from RZh--Elektronika i yeye primeneniya, No 6, June 1970, Abstract 6A138)

Translation: Nonlinear distortions during transit of two harmonic signals through a 10-cm band traveling-wave tube of average power are experimentally investigated. A measuring device was developed making it possible to conduct measurements of the individual spectral components entering the input of a TWT. During simultaneous amplification of two signals in a TWT, a mutual suppression of these signals is observed and also an increase of the phase inroad at both frequencies. The amplification factor and inroads of the phase are primarily determined by a signal of high intensity, and consequently there is the possibility of linearization of the dynamic characteristics of a TWT at the frequency of one signal by the introduction of an additional strong signal with a stable amplitude. Simultaneous amplification of

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USSR

IVANOV, V.A., et al. V sb. Dokl. nauchno.-tekhn. konferentsii..., Moscow, 1970,
pp 19-26

two harmonic signals is associated with the appearance of combination components in the output spectrum and also with a distortion of the enveloping amplitude. Near saturation the combination components become commensurable with the basic components. G.B.

2/2

USSR

UDC 666.189.2.:535.8

SATTAROV, D. K., ORLOV, Yu. P., IVANOVA, L. N., IVANOV, V. A.

"The Use of Round Multiple-Strand Light Conductors for the Production of Pressed Optical Fiber Elements"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No. 5, 1970, pp 43-46

Abstract: It is shown that round multiple-strand light conductors are suitable for the production of vacuumtight thermally pressed optical-fiber elements with a relatively low uniformity of the optical parameters with respect to the field of the part.

The experiments conducted show that circular multiple-strand light conductors made up of thin (0.3 mm diameter) fibers and having a final diameter of 2-3 mm are preferable.

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USSR

UDC: 669.895

IVANOV, V.A., KISHNEV, V.V., and LISOVSKIY, D.I.

"Investigation of a Commercial Process for Chlorination of Titanium Slags in a Melt by Electronic Modeling Methods"

Moscow, Tsvetnyye Metally, No 5, May 1970, pp 68-72

Abstract: Investigations were made of a commercial process for the chlorination of titanium slags in a melt with the help of an analog computer and equations expressing the reactions occurring during the chlorination process. To determine the parameters of the mathematical model of the chlorination process, dynamic characteristics obtained experimentally on the Kgt-5 commercial chlorinator were used. It was established that the mixing conditions of such components as TiO_2 , C, SiO_2 , $FeCl_2$, and $FeCl_3$ in each of the chlorinator capacities are close to the conditions in an ideal mixing reactor. In investigations on the kinetics of the process, all melt samples were taken in the center of the chlorinator, where TiO_2 concentration equalled its average concentration throughout the entire melt. In continuous chlorination, the TiO_2 content in the melt was lowered to 1.6-1.8%, causing intense frothing of the melt which was stopped by increasing the slag charge. It was recommended that to decrease the titanium loss, the charge should be loaded in the center of the chlorinator, thus eliminating drops in TiO_2 concentration between chlorinator capacities and thereby lowering the value $1/2$

USSR

IVANOV, V.A., et al, *Tsvetnyye Metally*, No 5, May 1976, pp 68-72

of $C_{TiO_2}^{min}$. It was also established that owing to the intense mixing and high fusion level with TiO_2 content in the melt up to 0.7%, passage of chlorine in waste gases is absent. The amount of titanium tetrachloride formed in the chlorination process per unit of time is determined primarily by the flow of chlorine fed into the chlorinator and practically does not depend on the change of current TiO_2 , C, $FeCl_2$ and $FeCl_3$ concentrations in the melt, and also in changes of the melt temperature and dispersed structure of the initial slag and petroleum coke. As a result of the identification of the real process and its electronic model, the structure and parameters of various operators were determined. Analysis of some equations showed that the consumption of the chlorine-air mixture and, consequently, the yield of $TiCl_4$ by the chlorinator, is limited not by the fusion level, but by the temperature in front of the bag filter in the condensation system. As a result of investigations on an analog computer, it was established that the mathematical model of the commercial process adequately reflects the basic features of the real process of titanium slag chlorination in a melt using a commercial chlorinator and, consequently, may be used for solving problems in automatic control.

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MATHEMATICAL MODELING OF THE NONISOTHERMAL ABSORPTION OF
FORMALDEHYDE IN PACKED COLUMNS WITH RECYCLE -U-
AUTHOR--(04)-KAFAROV, V.V., PEROV, V.L., LUCHINA, YE.T., IVANOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 212-15
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MATHEMATIC MODEL, FORMALDEHYDE, GAS ABSORPTION, WATER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0139 STEP NO--UR/0066/70/046/003/0212/0215
CIRC ACCESSION NO--AP0125955

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125955

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS DESCRIBING THE NONISOTHERMAL ABSORPTION OF HCHO IN H SUB2 O, WHEN THE GASEOUS PHASE TEMP. IS HIGHER THAN THE TEMP. OF THE H SUB2 O AND THE LIQ. IS RECIRCULATED THROUGH A HEAT EXCHANGER, ARE DERIVED; CALCNS. WITH A DIGITAL COMPUTER SHOW THAT WHEN THE RATE OF RECIRCULATION IS INCREASED (UP TO A CERTAIN LIMIT) THE HCHO CONC. IN THE GAS PASSING FROM ONE ABSORBER TO ANOTHER (AS WELL AS IN THE SPENT GASES) DECREASES, AND TO MINIMIZE THE LOSS OF HCHO WITH THE SPENT GASES THE PROCESS SHOULD BE CARRIED OUT AT LOW TEMPS. (8-10DEGREES). THE USE OF A DROPLET COLLECTOR AFTER THE ABSORBERS SHOULD ALSO REDUCE THE LOSSES OF HCHO.

UNCLASSIFIED

USSR

UDC 539.3

IVANOV, V. A.

"A Three-Dimensional Problem in Elasticity Theory for a Six-Walled Cylinder of Finite Length"

Kiev, Prikladnaya Mekhanika, No 9, 1970, pp 16-22

Abstract: The problem of the stress-deformed state of a six-walled isotropic cylinder of finite length is considered within the framework of linear elasticity theory. It is assumed that the cylindrical surfaces are acted upon by distributed loads, and that the ends are free of any stresses. Fulfillment of the conditions at the cylindrical surfaces and the conditions of free support at the ends leads to a solution of infinite systems of algebraic equations. It is shown that the estimates and conclusions contained in the work by V. T. Grinchenko, obtained for an axially symmetrical problem in elasticity theory, are applicable to problems without axial symmetry.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MATHEMATICAL MODEL OF THE CONTINUOUS STRIPPING OF SLAGS -U-
AUTHOR--(05)--LISOVSKIY, D.I., IVANOV, V.A., SHAPIROVSKIY, M.R., GOLUBEV,
V.I., LYAPUNOV, I.O.
COUNTRY OF INFO--USSR
SOURCE--IZV.VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 141-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MATHEMATIC MODEL, METALLURGIC SLAG, METALLURGIC PROCESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0841 STEP NO--UR/0149/70/013/001/0141/0147
CIRC ACCESSION NO--AT0132931
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132931

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF STRIPPING THE SLAG
IS DESCRIBED BY 11 MATH. EQUATIONS. FACILITY: MOSK. INST. STALI
SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF CATALYSTS FOR LOWERING THE DRYING TEMPERATURE OF ALKYD
MELAMINE ENAMELS -U-
AUTHOR--(04)-CHUPEYEV, M.A., IVANOV, V.A., BORISOVA, L.D., MOZOLEV, V.P.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 35-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACID CATALYSIS, ALKYD RESIN, MELAMINE RESIN, ENAMEL, PIGMENT,
HARDNESS, COLOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3006/1071 STEP NO--UK/0303/70/000/002/0035/0036
CIRC ACCESSION NO--AP0134760
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134760

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF ACID CATALYSTS AND THEIR CONCNS. ON THE HARDNESS AND COLOR OF ALKYD MELAMINE ENAMEL (A) COATINGS DRIED 30 MIN AT 100DEGREES OR AN 130DEGREES WAS STUDIED. (BUO) SUB2 P(O)OH (I), A 1:1 MIXT. OF I AND MALAMINE, HCHO RESIN (II) K,423,02 (IIA), BUOP(O)OH SUB2 (III), P,MEC SUB6 H SUB4 SO SUB3 H (IV), AND PHTHALIC ANHYDRIDE WERE ADDED TO A WHITE PIGMENTED A CONTG. 25PERCENT II (IIA OR K,421,02(IIIB)) AND ALKYD RESINS MODIFIED BY CASTOR OIL AND SYNTHETIC FATTY ACID, 21.7PERCENT AND 28.83PERCENT, RESP. WITHOUT CATALYST, A CONTG. IIA DRIED AT 100DEGREES FOR 30 MIN AND 90DEGREES FOR 20 MIN HAD HARDNESSES 0.57 AND 0.34, RESP.; AND A CONTG. IIB, A BUTYLATED II, DRIED SIMILARLY HAD HARDNESSES 0.60 AND 0.14, RESP. ADDING 2-3PERCENT I OR III TO A CONTG. IIA DRIED AT 100DEGREES GAVE HARDNESSES 0.5-0.63. ADDING 4PERCENT I OR III TO A CONTG. IIB. DRIED AT 130DEGREES GAVE HARDNESSES 0.38-0.42. ADDING 3PERCENT III OR IV CAUSED SIGNIFICANT COLOR CHANGES TO WHITE PIGMENTED A DRIED AT 100DEGREES.

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133673

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRESENTS THE RESULTS OF MEASUREMENTS OF THE VOLUME OF ARGON IN THE MELTING REGION AT 291.6, 294.2, AND 322DEGREESK. IT IS FOUND THAT $\Delta V_{SUBM} - V_{SUBS}$, WHERE ΔV_{SUBM} IS THE CHANGE IN VOLUME OF MELTING AND V_{SUBS} IS THE VOLUME OF SOLID ARGON AT THE MELTING POINT, TENDS TO ZERO WHEN THE MELTING TEMPERATURE INCREASES. FACILITY: USSR ACAO, SCI,

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF A GERMANIUM DETECTOR FOR NEUTRON RADIATION ANALYSIS OF THE
CONTENT OF ELEMENTS AND NEUTRONS -U-
AUTHOR-(03)-DEMIDOV, A.M., GOVOR, L.I., IVANOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ATOMNAYA ENERGIYA, VOL 28, NO 2, FEB 70, PP 115-120

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--NEUTRON RADIATION, RADIATION DETECTOR, GERMANIUM, GAMMA
SPECTRUM, GEOLOGY, THERMAL NEUTRON, NUCLEAR REACTOR/(U) IRTM NUCLEAR
REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1615

STEP NO--UR/0089/70/023/002/0115/0120

CIRC ACCESSION NO--AP0123461

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIAL FEATURES AND ADVANTAGES OF ELEMENT AND ISOTOPE ANALYSIS WITH THE USE OF A GE(LI) DETECTOR ACCORDING TO THE GAMMA SPECTRA OF RADIATION CAPTURE OF THERMAL NEUTRONS IN SPECIMENS IS CONSIDERED. THE RESULTS OF ANALYSES OF SOME GEOLOGICAL SAMPLES AND MATERIALS (DURAL, COPPER NICKEL ALLOY, SAND DAY MIXTURE, CALCITE, ZIRCONIUM, APATITE, MONACITE, SCHEELITE, GYPSUM, ND AND BA ISOTOPES) CONDUCTED ON THE THERMAL NEUTRON BEAM FROM THE IRT-M REACTOR OF THE ATOMIC ENERGY INSTITUTE IMENI I. V. KURCHATOV, ARE PRESENTED AND DISCUSSED.

UNCLASSIFIED

IVANOV, V. B.

PA 255T81

USSR/Electronics - Television
Competitions

Mar 53

"Results of the Competition on Mass Television
Receivers"

Radio, No 3, pp 43-45

Second prizes of 10,000 rubles were awarded to
G. A. Vilkov for the 20-tube "TV-3" receiver
and to V. B. Ivanov and I. N. Tovbin for the
15-tube "Luch" receiver. An incentive award
of 3,000 rubles was awarded to I. G. Starikov
for his "Pioner" and one of 2,000 rubles was

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awarded to V. A. Klibson, M. G. Markovich,
D. M. Murin, and D. S. Kheyfets for their
14-tube "Leningrad". [Klibson and Kheyfets
were designers of the commercial "Leningrad
T-2" receiver.] On the whole, competition was
adjudged unsuccessful.

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ACTION OF VARIOUS INHIBITORS OF PROTEIN SYNTHESIS ON THE DIVISION
AND DISTENSION OF CELLS IN ROOTS -U-
AUTHOR--IVANOV, V.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 224-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, CELL PHYSIOLOGY, ANTIBIOTIC, MITOSIS, INHIBITION,
PROTEIN SYNTHESIS, PLANT PHYSIOLOGY, CHLORAMPHENICOL, TETRACYCLINE,
NEOMYCIN, MONOMYCIN/(U)BIOMYCIN ANTIBIOTIC, (U)PUROMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0865

STEP NO--UR/0020/70/191/001/0224/0227

CIRC ACCESSION NO--AT0129934

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129934

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLORAMPHENICOL, TETRACYCLINE, AND
BIOMYCIN INHIBITED MITOSIS OF CORN ROOT CELLS, BUT NOT THEIR ELONGATION.
THEY ALSO INHIBITED THE GROWTH OF SECONDARY ROOTS FROM THE PRIMARY
ROOT. THEY PROBABLY SELECTIVELY INHIBIT THE SYNTHESIS OF PROTEINS
NECESSARY FOR MITOSIS, BUT NOT THOSE NECESSARY FOR ELONGATION.
ACTIDIONE, PUROMYCIN, NEOMYCIN, MONOMYCIN, AND P FLUOROPHENYLALANINE
INHIBITED THE ELONGATION OF ROOT CELLS, BUT DID NOT AFFECT THE GROWTH OF
SECONDARY ROOTS. APPARENTLY THESE COMPOS. INHIBIT THE SYNTHESIS OF
PROTEINS NECESSARY FOR ELONGATION. FACILITY: INST. OBSHCH.
NEORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.373:530.145.6

IVANOV, V. D., LEONTOVICH, A. M.

"Spatial Coherence of Emission From a Ruby Laser With Pulse Q"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 96-101 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D185)

Translation: Concepts of the effect which nonhomogeneities in permittivity and its changes during burnout of population inversion have on emission modes are taken as a basis for determining conditions of spatial coherence or incoherence of emission of a giant pulse as functions of the original transverse distribution of the population inversion in the active rod, and the change in Q during emission. These conditions were experimentally verified for the case of emission with a saturated filter under "mild" conditions. Two illustrations, one table, bibliography of thirteen titles. Resumé.

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- 97 -

Acc. Nr.: **AP0029511**

Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 1, pp 66-71

DETERMINATION OF ABSORBED DOSES IN A TRACHEA
MODEL WITH RADON-CONTAINING ATMOSPHERE
AT A POLYMETAL MINE

V. N. Kirichenko, V. D. Ivanov

By means of a specially elaborated method and an apparatus there were measured doses of α -radiations of short-life daughter products of radon on the internal surface of a trachea model in various parts of polymetal mines. Simultaneously the level of «latent» energy and the content of «free» radium atoms in the atmosphere were supervised. The doses determined in the models correlated sufficiently with the content of «free» atoms. However, no definite relation could be traced between the doses in the model and the level of «latent» energy.

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REEL/FRAME

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11-12

Doc. 001.000.14-011

11-12, 11-13, 11-14, 11-15.

"Parameters of Conditions of Thermal Compression and Heating of Metals under Heating"

Abstract from sci. Nauchno-tekhn. sb. (The Electronics Industry. A Scientific and Technical Collection), 1970, No 1, pp 108-110 (from RZh-Radiotekhnika, No 10, 1970, Abstract No 10V160)

Translation: The authors outline the principles of plotting nomograms for determining microwelding conditions on the basis of an analysis of the interrelationship between basic parameters (temperature, pressure, time). Optimum deformation of gold and aluminum wires is studied as a function of temperature and pressure. Résumé.

1/2 010 UNCLASSIFIED PROCESSING DATE--090C170
TITLE--SOLVENT EFFECT ON THE DIFFERENTIAL CAPACITY AND INTERFACIAL TENSION
OF A MERCURY ELECTRODE IN CONCENTRATED LITHIUM NITRATE SOLUTIONS -U-
AUTHOR-(03)-IVANUV, V.F., DAMASKIN, B.B., MAYOROVA, L.F.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(3), 382-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MERCURY, DROPPING MERCURY ELECTRODE, LITHIUM COMPOUND, NITRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0211 STEP NO--UR/0364/70/006/003/0382/0384
CIRC ACCESSION NO--AP0115915
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115915

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENTIAL CAPACITY C AND THE INTERFACIAL TENSION σ OF A HG ELECTRODE WERE MEASURED IN 0.1N AND SATD. SOLNS. OF LINO SUB3. THE ΔC AT THE MIN. OF THE C Φ CURVES AT EPSILON SMALLER THAN 0, AND $\Delta \sigma$ AT EPSILON EQUALS 0 WERE PLOTTED VS. THE MOLAR CONC. C SUB0, OF LINO SUB3 IN SOLNS. OF H SUB2 O, MEQH, AND ETOH, WHERE Φ IS THE ELECTRODE POTENTIAL AND EPSILON THE SURFACE CHARGE D. ON THE ELECTRODE. THE C AT EPSILON SMALLER THAN 0, INCREASES AND σ AT EPSILON EQUALS 0, DECREASES, WITH INCREASING C SUB0, IN THE ORDER H SUB2 O LARGER THAN MEQH LARGER THAN ETOH. THESE EFFECTS ARE ATTRIBUTED BASICALLY TO A LOW SOLV TION OF NO SUB3 PRIME NEGATIVE IONS AND THE DISPLACEMENT EFFECT OF THE SOLVENT MOLS. THEREON. MIN, IN THE $\Delta \sigma$ C SUB0 CURVES FOR MEQH AND ETOH ARE ASCRIBED TO THE ADSORPTION ON THE HG SURFACE OF A LAYER OF SOLVENT MOLS, BENEATH ADSORBED NO SUB3 PRIME NEGATIVE IONS. THE VALUES OF THE SHIFT OF THE ZERO CHARGE POTENTIAL, ON INCREASING C SUB0 FROM 0.1N TO SATN., ARE MINUS 140, MINUS 100, AND MINUS 20 MV IN H SUB2 O, MEQH, AND ETOH SOLNS. RESP., I.E., IN THE ORDER OF DECREASING DISPLACING EFFECT.

FACILITY: TUL. POLITEKH. INST., TULA, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.315.61

LUDUPOV, Ts. Zn., IVANOV, V. F., ANIKIN, I. N., SHUMARINA, Ye. I.

"Dielectric Properties of Artificial Mica Along the Plane of Cleavage on Superhigh Frequencies"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, 52-57 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V418)

Translation: The authors give the results of measurement of complex permittivity along the plane of cleavage parallel to crystallographic axes a and b in fluorophlogopite by a waveguide method in the millimeter and centimeter ranges. Artificial mica is investigated in the 20-200°C temperature range on a frequency of 10^{10} Hz. Resumé.

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--KINETICS OF ELECTROLUMINESCENCE OF ALUMINUM OXIDE FILMS -U-
AUTHOR--(02)-IVANOV, V.F., MIKHO, V.V.
COUNTRY OF INFO--USSR
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(4), 539-42
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION KINETICS, ELECTROLUMINESCENCE, ALUMINUM
OXIDE, OXIDATION, ALUMINUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0138 STEP NO--UR/0185/70/015/004/0539/0542
CIRC ACCESSION NO--AP0135635
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135635

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF QUENCHING OF LUMINESCENCE, GENERATED BY AN EXCITATION WITH PI CHARGE IMPULSES, WAS STUDIED ON AL OXIDE FILMS PREPD. BY ELECTROCHEM. OXIDN. OF AL IN AQ. OXALIC ACID SOLNS. THE RATE OF LUMINESCENCE QUENCHING DEPENDED ON EQUIL. OF EXCITATION STATE, THUS ON DISTRIBUTION OF ELEC. FIELD IN THE SAMPLE. KINETIC RESULTS AGREED WITH EXPTL. SPECTRAL DISTRIBUTION OF LUMINESCENCE AT CHANGING CONDITIONS OF EXCITATION. FACILITY: ODESS. GOSUNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ADSORPTION OF IONS FROM CONCENTRATED CESIUM FLUORIDE SOLUTIONS -U-
AUTHOR--(03)-DAMASKIN, B.B., IVANOV, V.F., MELEKHOVA, N.I.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(3), 385-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, AQUEOUS SOLUTION, SURFACE TENSION, CESIUM
COMPOUND, POTASSIUM COMPOUND, FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1138 STEP NO--UR/0364/70/006/003/0385/0388
CIRC ACCESSION NO--AP0121697
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF IONS AT THE SOLN. HG AND SOLN. AIR INTERFACES FOR CSF SOLNS. WAS INVESTIGATED BY THE DIFFERENTIAL CAPACITY CURVE, ELECTROCAPILLARY CURVES, AND SURFACE TENSION METHODS. MEASUREMENTS WERE MADE IN SOLNS. AT CSF CONCNS. OF 0.01-15.4 M (SATD. SOLN). AT 20 PLUS OR MINUS 1DEGREE AND PH 7.5-8. A GREAT SIMILARITY WAS NOTED BETWEEN THE BEHAVIOR OF CSF SOLNS. AND KF SOLNS. THE DIFFERENCES AND SIMILARITIES IN THE BEHAVIOR OF THESE SALTS ARE DISCUSSED AND EXPLAINED. FACILITY: TUL. POLITEKH. INST., TULA, USSR.

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where u_n and v_n are a projection of the velocity vectors of the corresponding components on the x and y axes; N is the number of components, while ρ_{n0} are unperturbed values of their densities, permitting the flow of each component to be considered irrotational and accordingly the introduction of a perturbation potential for each component. The remainder of the investigation is done using operational calculus methods.

Gadion, V. N., V. G. Ivanov, G. I. Mikhlin, S. N. Palkin, and L. I. Shurin. Electromic and gas dynamic parameters of hypersonic wakes behind models moving in argon. ZhTF, no. 5, 1972, 1049-1055.

The conductivity, velocity, and width of hypersonic wakes behind models moving in argon were studied within a velocity range of 3300-4900 m/sec, at pressures of 30, 40, 60, 80, and 100 torr and a temperature of about 290° K. The experiments were conducted on polyethylene 8 mm cylindrical models of small elongation with spherical noses and conic skirts. Copperplated aluminum spheres 5.4 mm in diameter were used for control experiments. The models were shot into a pressure chamber provided with instrumentation for measurement of the wake conductivity and velocity. Wake velocity was measured electro-dynamically and by the Toeppler method.

Measurement results are presented for tests of wake conductivity at a constant pressure and variable velocity or at a constant velocity and variable pressure. The latter test results show that as the distance from the body increases, a relationship develops between the

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UDC 533.932

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"Study of the Conductivity of Hypersonic Wakes on a Ballistic Device"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 635-637

Abstract: Results are presented from measuring the conductivity of a hypersonic wake for model flight speeds of 3.3-6.4 km/sec and an air pressure of 40, 80 and 160 mm Hg. These data are used to calculate the electron concentration drop downstream which offers the possibility of estimating the electron concentration decrease rate. Analysis of the results shows that the decrease in electron concentration in the "hot" part of the far wake ($T > 1000^\circ \text{K}$) is determined by the process of dissociative recombination $\text{NO}^+ + e \rightarrow \text{N} + \text{O}$, and the recombination coefficient is approximately described by the function $\alpha \approx 3 \cdot 10^{-3} T^{-3/2} \text{ cm}^3/\text{particle-second}$.

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"Investigation of the Electronic and Gas-Dynamic Parameters of a Hypersonic
Wake Behind Models Moving in Argon"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 5, May 72, pp 1049-1055

Abstract: The paper presents experimental results on measurement of the conductivity, velocity and diameter of the wake behind models moving in argon at 3300-4900 m/s. The pressure in the test chamber was varied from 30 to 100 mm Hg. The models were cylinders with low aspect ratio with a spherical nose and a tapered skirt 8 mm in diameter. The test models were made from polyethylene, and control measurements were made on aluminum copper-plated spheres 5.4 mm in diameter. Taking the initial conditions of the experiment as a basis, a theoretical analysis is made of the temperature, velocity and diameter of the wake, and the electron concentration along the wake using various models of viscosity. The viscosity models are evaluated by comparing theoretical and experimental data on wakes with a length up to 500 times the diameter of the model.

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"The Effect of Prophylactic Ultraviolet Irradiation on Antibody Production in Rabbits Immunized With DPT Vaccine

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, Vol 45, No 6, Jun 71, p 148

Abstract: The effect of the combined application of small doses of ultraviolet (UV) irradiation with DPT vaccine on the production of antibodies to the pertussis, diphtheria, and tetanus antigenic components of the vaccine was studied. Rabbits were divided into three groups. Group one, the control group, received only the vaccine in an intramuscular dose of 0.15-0.25 ml/kg, in group two the animals were irradiated with UV in increasing doses from 1/4 to 1 3/4 biodoses immediately after vaccination. In group three rabbits were given the vaccine after a course of 7-8 treatments with UV. Antibody

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IVANOV, V. G., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii,
Vol 48, No 6, Jun 71, p 148

titers were determined by the indirect hemagglutination method using ultrasonic erythrocyte diagnosticums (developed by Moshiasvili). It was established that ultraviolet irradiation intensified the rate of antibody formation to the three antigenic components of the vaccine, the highest rate of antibody production occurred in response to the pertussis component of the vaccine, and immunity to pertussis was retained longest in animals vaccinated after a preliminary course of UV treatment.

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